

CLAIMS

1. A platen for a planar linear motor provided with a platen body using a stacked member comprised of a large number of magnetic sheets aligned and stacked together and having a large number of platen dots formed in a two-dimensional array at one parallel sheet edge surface side of the stacked member,

said platen for a planar linear motor characterized by having a connecting beam member supporting said stacked member at regular discrete positions in the sheet edge direction at the other parallel sheet edge surface side of the stacked member and binding means for binding the magnetic sheets between the other parallel sheet edge surface side and the connecting beam members.

2. A platen for a planar linear motor as set forth in claim 1, characterized in that each of said binding means is a joint of a fluid hardening material having a molded connecting part fastening to a male part or female part formed along a perpendicular direction of the other parallel sheet edge surface and a molded joining part connected with the molded connecting part and holding part of a connecting beam member.

3. A platen for a planar linear motor as set forth in claim 2, characterized in that said female part is a groove, said platen body has a backing plate placed against the other parallel sheet edge surface, the backing plate has a plurality

of first through holes discretely arranged longitudinally in lines across the strip-shaped portion facing the grooves, each connecting beam member has a bent side end placed against the backing plate, said bent side end has a plurality of second through holes discretely arranged longitudinally in lines in the beam longitudinal direction, and said molded connecting part is a rivet-shaped molded part formed by filling the first and second through holes.

4. A platen for a planar linear motor as set forth in claim 3, characterized in that said groove is narrow in opening and broad in interior in lateral cross-section.

5. A platen for a planar linear motor as set forth in claim 1, characterized in that each of said binding means is a welded joint formed by laser beam welding abutting edges of a side surface of a connecting beam member and the other parallel sheet edge surface along the same.

6. A platen for a planar linear motor as set forth in claim 5, characterized in that each said connecting beam member has a bent side end, and said side surface is an outside surface of said bent side end.

7. A platen for a planar linear motor as set forth in claim 1, characterized in that each said connecting beam member is provided with a beam body having a bent side end and a long spacer placed against an outside surface of said bent side end

and fastened or made integral with the same, and each of said binding means is a welded joint formed by laser beam welding abutting edges of the long spacer and the other parallel sheet edge surface along the same.

8. A platen for a planar linear motor as set forth in claim 1, characterized in that said stacked member has grooves formed along a perpendicular direction of the other parallel sheet edge surface, each said connecting beam member is provided with a beam body having a bent side end and a long male part placed against the outside surface of the bent side end and fastened or made integral with the same, and each of said binding means is a joint of a fluid hardening material formed by filling clearances between the long male part and the groove loosely fit together.

9. A platen for a planar linear motor as set forth in claim 8, characterized in that each said groove is narrow in opening and broad in interior in lateral cross-section, the long male part is broad in front end and narrow in base in lateral cross-section, and the front end of the long male part is inserted into the opening of the groove.

10. A platen for a planar linear motor as set forth in claim 2, characterized in that said female part is a groove, said connecting beam member has a bent side end, said bent side end has a plurality of through holes discretely arranged

longitudinally in lines in the beam longitudinal direction, said molded connecting part is a male molded part formed by filling the groove, and the molded joining part is a rivet-shaped molded part formed by filling the through holes.

11. A platen for a planar linear motor as set forth in claim 10, characterized in that said groove is narrow in opening and broad in interior in lateral cross-section.

12. A platen for a planar linear motor as set forth in claim 2, characterized in that said male part is a projecting ridge, each said connecting beam member has a groove having a plurality of through holes discretely arranged in a line longitudinally along the beam longitudinal direction in the groove bottom, said molded connecting part is a female molded part formed by filling the remaining clearance in said groove when said groove accommodates said projecting ridge, and said molded joining part is a rivet-shaped molded part formed by filling said through holes.

13. A platen for a planar linear motor as set forth in claim 12, characterized in that said projecting ridge is broad in front end and narrow in base in lateral cross-section.

14. A platen for a planar linear motor as set forth in claim 2, characterized in that said female part is narrow in opening and broad in interior in lateral cross-section, each said connecting beam member has a plurality of notches formed

discretely along the beam longitudinal direction of its side end surface, said molded connecting part is a male molded part formed by filling the remaining clearance when said side end surface is made to abut against the bottom surface of said groove, and said molded joining part is a rivet-shaped molded part formed by the overflow of the material from the opening of said groove.

15. A platen for a planar linear motor as set forth in claim 14, characterized in that female part is a first groove narrow in opening and broad in interior in lateral cross-section, each said connecting beam member has a bent side end, said bent side end has a second groove formed at its outside surface along the beam longitudinal direction and narrow in opening and broad in interior in lateral cross-section, and each of said binding means is a pegged dual bulging end molded part formed by filling the first and second grooves in a mated state.

16. A platen for a planar linear motor as set forth in any one of claims 10 to 15, characterized in that said stacked member is comprised with bonding layers interposed between adjoining magnetic sheets.

17. A platen for a planar linear motor as set forth in any one of claims 10 to 16, characterized in that said fluid hardening material is a molten metal material.

18. A platen for a planar linear motor as set forth in claim 17, characterized in that said molten metal material is

a filler material.

19. A platen for a planar linear motor as set forth in claim 18, characterized in that said filler material is an aluminum alloy.

20. A platen for a planar linear motor as set forth in any one of claims 10 to 16, characterized in that said fluid hardening material is a molten resin material.

21. A platen for a planar linear motor as set forth in any one of claims 10 to 16, characterized in that said fluid hardening material is an adhesive.

22. A platen for a planar linear motor as set forth in any one of claims 1 to 21, characterized in that said magnetic sheets are blankings provided with platen dot use projections at every predetermined spatial period along one side edge.

23. A platen for a planar linear motor as set forth in any one of claims 1 to 21, characterized in that said platen dots are formed by hape-cutting electrodischarge machining the other parallel sheet edge surface of the stacked member.

24. A platen for a planar linear motor as set forth in any one of claims 1 to 21, characterized in that said platen dots are formed by etching one parallel sheet edge surface of the stacked member.

25. A platen for a planar linear motor as set forth in any one of claims 1 to 24, further provided with an outside frame

abutting against at least the two side surfaces of the stacked member in the stacking direction and clamping the stacked member.

26. A platen for a planar linear motor as set forth in claim 25, characterized in that said platen body and said outside frame form a box structure.